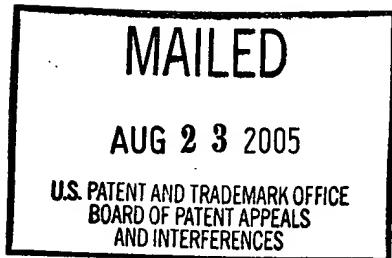


The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES



Ex parte SALMAN AKRAM

Appeal No. 2005-1706
Application No. 09/853,111

ON BRIEF

Before THOMAS, BARRETT, and BLANKENSHIP, Administrative Patent Judges.
BLANKENSHIP, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 15-22, 32, 34, and 35, which are all the claims remaining in the application.

We affirm.

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Application No. 09/853,111

BACKGROUND

The invention is directed to a method for mounting semiconductor dies on a leadframe and wirebonding the dies to the leadframe such that the device may be encapsulated in a package. Representative claim 15 is reproduced below.

15. A method for mounting multiple semiconductor dies on a single leadframe having fingers, comprising:

stacking at least two semiconductor dies having substantially the same rectangular dimensions on top of one another such that one of said dies is mounted on top of the leadframe fingers and the other of said dies is mounted on and in contact with the die mounted on the leadframe fingers; and

wirebonding each of said semiconductor dies to the same leadframe fingers.

The examiner relies on the following reference:

| | | |
|------|-----------|----------------------|
| Sota | 5,646,829 | Jul. 8, 1997 |
| | | (filed May 31, 1995) |

Claims 15-22, 32, 34, and 35 stand rejected under 35 U.S.C. § 102 as being anticipated by Sota.

We refer to the Final Rejection (mailed Feb. 19, 2004) and the Examiner's Answer (mailed Aug. 18, 2004) for a statement of the examiner's position and to the Brief (filed Jun. 10, 2004) for appellant's position with respect to the claims which stand rejected.

OPINION

Appellant argues the merits of claims 15 and 19. We select these claims as representative of the claims on appeal, consistent with the rules effective at the filing of the Brief. See 37 CFR § 1.192(c)(7) (2003).

The examiner contends that instant claim 15 reads on the method of constructing the semiconductor device shown in Figures 3(a) through 3(e) of Sota.

Appellant argues that Sota does not teach two dies “in contact” with one another.

Appellant contests the examiner’s position that the recitation “in contact” fails to preclude the intervening elements that separate dies 1, such that the dies may be considered “in contact” within the meaning of the claim.

Sota discloses that two semiconductor chips 1 are die-bonded to both surfaces of die pad 2 using a die-bonding agent (col. 5, ll. 12-14). An insulating resin 6 is applied to the surface of die pad 2 (col. 4, l. 54 - col. 5, l. 11). Sota further teaches that the resin may be used as the die bonding agent (col. 5, ll. 15-32). Elements between dies 1 as shown in Figure 3(e) thus may be considered to include resin 6, die pad 2, and the proximal portions of inner leads 3; i.e., the “leadframe fingers” in the terms of instant claim 15.

Appellant argues (Brief at 4) that the dies of Sota are “on opposite sides of the leadframe 3, not both on top of it as called for by claim 15.” Claim 15, however, recites that one of the dies is mounted on top of the leadframe fingers, and the other of the

dies is mounted on and in contact with the die mounted on the leadframe fingers. Only one die is required to be mounted “on top” of the leadframe fingers. The other of the dies is “mounted on” and “in contact with” the first die. The “mounted on” recitation does not require that both dies be “on top” of the leadframe fingers. The dies are stacked “on top of one another,” which is language consistent with “top” merely referring to relative alignment. Only one die of a pair can be “on top” of the other when describing fixed, non-relative positioning.

Appellant admits that while “in contact” may be defined as “the union or junction of surfaces,” the claim 15 recitation does not preclude an adhesive layer between the dies, as disclosed, and as claimed in dependent claim 17. According to appellant, the dies of Sota are separated not only by resin 6 but, “more significantly, by the leadframe 3 as well,” concluding that the dies “cannot be in contact.” (Id.)

We find a “union of surfaces” between dies 1, as shown in Figure 3(e), at least by virtue of resin 6 extending between the dies. The dies are thus in contact with one another in the same sense as recited in claim 17 -- adhered by an adhesive layer. Even if leadframe 3 were to be considered an intervening element, as argued by appellant, on this record we fail to see how claim 15 allows an adhesive layer between the dies but somehow precludes leadframe fingers between them. Claim 15 does not recite “direct” contact between the dies (which it could not properly do, assuming that

written description support for such a feature is lacking). Nor is the claim limited to the presence of “only” an adhesive layer between the dies.

We also find appellant’s arguments in support of claim 19 to be unpersuasive. According to appellant (Brief at 5), in Sota “the two dies are secured on the opposite side of the leadframe and a die secured to the leadframe does not have another die secured to that die.” The position reflects reading implied limitations into the claim that are simply not required. Claims are to be given their broadest reasonable interpretation during prosecution, and the scope of a claim cannot be narrowed by reading disclosed limitations into the claim. See In re Morris, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); In re Prater, 415 F.2d 1393, 1404-05, 162 USPQ 541, 550 (CCPA 1969). “[D]uring patent prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed.” In re Zletz, 893 F.2d at 321, 13 USPQ2d at 1322.

Claim 19 requires that one of the dies be secured to the leadframe and the other of the dies be secured to the die secured to the leadframe. The claim does not preclude, however, that both dies be secured to the leadframe or, for that matter, that both dies be secured to each other. At least the provision of resin 6 as described by Sota ensures that one of the dies is secured to the leadframe and that the other of the dies is secured to the die secured to the leadframe.

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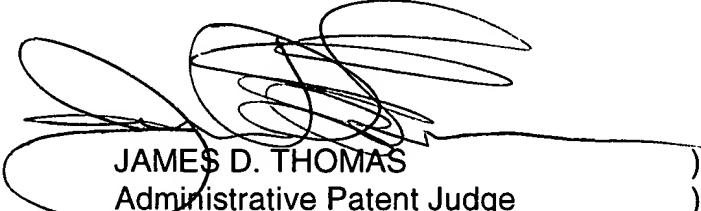
We are thus not persuaded of error in the examiner's finding of anticipation with respect to any claim on appeal. We sustain the § 102 rejection of claims 15-22, 32, 34, and 35.

CONCLUSION

The rejection of claims 15-22, 32, 34, and 35 under 35 U.S.C. § 102 as being anticipated by Sota is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a). See 37 CFR § 1.136(a)(1)(iv).

AFFIRMED



JAMES D. THOMAS
Administrative Patent Judge

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BOARD OF PATENT
APPEALS
AND
INTERFERENCES



LEE E. BARRETT
Administrative Patent Judge



HOWARD B. BLANKENSHIP
Administrative Patent Judge

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Appeal No. 2005-1706
Application No. 09/853,111

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